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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/640,514	08/17/2000	Frank J. DiSanto	Copy-51	6300

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P.O. BOX 226  
Fort Washington, PA 19034

EXAMINER
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EISEN, ALEXANDER

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/640,514	DISANTO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Alexander Eisen	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11, 14-17 and 35-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-17 and 35-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>11/2/06</u> | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11, 14, 35, 36, 38 and 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 1, from which the rest of the claims above are dependent from, recites: "adjacent ones of the walls extend from one of the first and transparent electrodes", thus implying that the walls could be extending from either one of the first and transparent electrodes. The specification, page 6, lines 12-23, which the Applicants relies upon in support for such claim language, actually only discloses that "the walls 26 (four side walls 26 are illustrated in the embodiment of FIG. 3A) which project generally perpendicularly from the inner surface 23 of the cathode 12", i.e. the walls are only extending from the first electrode. There is no other than that disclosure teaching that the walls could be extended from the transparent electrode, and therefore the claimed now subject matter constitutes a new matter.
3. The following prior art based rejection is made assuming that the new matter is deleted from claims, and basically the rejection of claims presented in the previous office action is applied.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 10-11, 14 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ota, US Patent No. 3,668,106.

As to claims 1 Ota discloses a multi-color electrophoretic image display comprising a first electrode Y (FIGS. 7-8, column 6, lines 1-38) defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid (suspension layer 22) disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions on the transparent and reflect light entering the display thereby forming an image, which can be more than one color. Ota also teaches spacers 38 and 40 for retaining a electrophoretic fluid 22.

As can be seen from FIGS. 7 and 8a-b, the spacer 38 the cells are in fluid communication with one another.

As to claim 2, Ota teaches the transparent second electrode X includes rows of electrically conductive transparent electrode lines (col.6, lines 11-14 and col. 10, lines 37-44).

As to claims 3 and 4, cells define electrically conductive electrode pads that are elongated (strips X and Y).

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As to claim 5, Ota teaches that cells could be of variety of different shapes including a square or rectangular.

As to claims 6, 7, 10, 11, 17 and 36, Ota teaches that a colored display can be achieved by using multicolor filters formed on transparent upper housing wall adjacent to second electrode, including red, blue and green colors, or, as an alternative, in order to produce even better color images by using different colors of suspensions (col. 10, lines 52-62).

As to claim 8, Ota teaches light electrophoretic material (col. 3, lines 63-66).

As to claim 14, each of the cells forms a picture element or pixel (col. 10, lines 45-51).

As pertaining to claims 37 and 39, Ota teaches a plurality of walls 40 extending perpendicularly to the first electrode (as in FIG. 8c).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in view of Check III et al., US 5,467,217.

Ota discloses a multi-color electrophoretic image display comprising a first electrode Y defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions

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on the transparent and reflect light entering the display thereby forming an image, which can be more than one color.

Check III et al. teaches that the particles coated with a solid polymeric can be used in an electrophoretic display (col. 1, lines 20-52, col. 4, lines 5-18 and col.8, lines 10-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the particles in the electrophoretic display coated with a polymer as taught by Check III et al., because polymeric stabilizers improve the display by reducing the tendency of particles to agglomerate and keep them dispersed (col. 1, lines 63-67).

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in view of Iwanaga et al., ("Iwanaga"), US Patent No. 5,739,946.

Ota discloses a multi-color electrophoretic image display comprising a first electrode Y defining a plurality of cells at the intersection of electrode Y with a plurality of electrodes X, a second transparent electrode X, separated from first electrode by space, an electrophoretic fluid disposed between the first and second electrodes, the electrophoretic includes a plurality of particles dispersed in the cells of the first electrode being movable to and from adjacent positions on the transparent and reflect light entering the display thereby forming an image, which can be more than one color.

Ota does not disclose, however, that the pixels of different color can be disposed in different planes.

Iwanaga teaches a display device, wherein three layers of cells are used for realizing the color display (see FIG. 28, column 20, lines 25-64).

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At the time of the invention it would have been obvious to one of ordinary skill in the art to use the alternative structure for the color display device of Ota as taught by Iwanaga, because it allow to display different colors by a single pixel and therefore to obtain a good quality of a color display (col. 20, lines 55-59).

9. Claims 38 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in view of Hanji et al., (hereinafter Hanji), JP 01-211735.

While Ota does disclose that the walls 40 in FIG. 8c are shorter than the spacers 38, the embodiment does not teach that the cells are in fluid communication with one another.

Hanji teaches the electrophoretic display (FIGS. 1-4) wherein walls 16(26) are shorter than spacers 18.

It would have been obvious to one of ordinary skill in the art at the time when the invention was made to improve the display of Ota by the arrangement of spacers and walls taught by Hanji, i.e. to make the latter shorter than the former, in order to reduce the display unevenness and prolong a life of the display by moderating the precipitation of the velocity of electrophoretic particles (see the English abstract).

***Allowable Subject Matter***

10. Claims 15-17 are allowed.

11. The following is an examiner's statement of reasons for allowance: none of the references, either singularly or in combination, teach or fairly suggest a a multi-color electrophoretic image display comprising pixels of at least two different colors, the pixels defined by electrophoretic particle-containing cells each having adjacent side-walls being formed on a first electrode, and a second transparent electrode, separated from said first electrode by a

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spacer such that the electrophoretic particle-containing cells are in fluid communication with one-another, wherein the electrophoretic particles, in selected ones of the cells, are partially confined by the side-walls and electrophoretically movable to and from adjacent positions on said transparent second electrode and reflect light entering the display; and light reflected from one of the cells is a different color than light reflected from an adjacent one of the cells..

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Response to Arguments***

12. Applicant's arguments filed 02 November 2006 have been fully considered but they are believed to be answered by current rejection and therefore moot.

#### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,



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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (571) 272-7687.

The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander Eisen  
Primary Examiner  
Art Unit 2629

29 December 2006